

REMARKS/ARGUMENTS

Claims 1-16, 25-30, 37-40, and 45-49 are pending in the application. Claims 17-24, 31-36, and 41-44 have been cancelled without prejudice and disclaimer. Claims 8-16, 25-30, and 37-40 have been withdrawn from consideration due to a previous Election of Species Requirement. Independent claim 1 has been amended to recite additional features disclosed on page 36, lines 12-22 of the specification as filed. New claims 45 and 46 have been added and are supported by the disclosure on page 23, lines 12-14 and page 37, lines 10-18 of the specification as filed and Fig. 2. New independent claim 47 has been added and is supported by original claim 1. New claims 48-49 are similar to new claims 45 and 46. No new matter has been added.

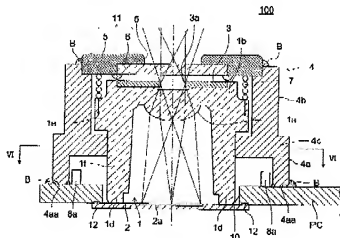
Reconsideration of the application as amended is respectfully requested.

Overview of the Office Action

Claims 1-7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pub. 2001/0055073 to Shinomiya in view of USP 5,783,815 to Ikeda.

Summary of Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.



The present specification discloses an image pickup device (100) formed on a base board PC, in which opening portion (10) is formed. An image pickup element (2) is provided to cover the opening portion (10) from the rear side of the base board PC.

An optical member (1) is provided for converging on image pickup element (2) through the opening portion (10) from the surface side of the base board PC by touching a light-intercepting surface representing the surface of the image pickup element (2). (*See, e.g.*, Fig. 2 reproduced above for the Examiner's convenient reference.) The optical member (1) includes a lens portion (1a) to form an image of an object onto the optical pickup element (2), a leg portion (1c) to support the lens portion (1a) and a contact portion (1d) to be brought in contact with the image pickup element (2). (*See, e.g.*, pg. 33, ln. 15 through pg. 36, ln. 2 of the specification as filed.)

The image pickup device (100) also comprises a lens frame (4) representing an outer frame member that covers the image pickup element (2) and the opening portion (10). The inner surface of the outer frame is engaged with the optical member. The outer frame is arranged at a prescribed position on the base board so that a center of a photoelectric conversion portion of the image pickup element agrees with a center of an optical axis of the lens portion of the optical member. (*See, e.g.*, pg. 31, ln. 2 to pg. 32, ln. 10 and pg. 36, ll. 12-22 of the specification as filed and Fig. 2.)

Allowability of the Claims

Independent Claim 1

Independent claim 1 recites "an optical member including a lens portion to form an image of an object onto the optical pickup element, a leg portion to support the lens portion, and a contact portion to be brought in contact with the image pickup element," "an inner surface of the outer frame being engaged with the optical member," and that "the outer frame is arranged at a

prescribed position on the base board so that a center of a photoelectric conversion portion of the image pickup element agrees with a center of an optical axis of the lens portion of the optical member.”

The above recited features of independent claim 1 are not taught by the combination of Shinomiya and Ikeda based on the following reason: (i) there is no teaching as to how Ikeda’s lens fitting member 5 can be incorporated in Shinomiya as an optical member engaging with an inner surface of Shinomiya’s frame 13 (interpreted by the Office Action as the claimed outer frame); and (ii) Ikeda’s lens fitting member 5 cannot be readily incorporated in Shinomiya’s solid state imaging apparatus and brought in contact with its imaging element 9 because the legs 6 of Ikeda’s lens fitting member 5 will interfere with Shinomiya’s optical filter 7.

Shinomiya discloses a solid state imaging apparatus, in which an imaging element 9 is mounted on the rear side of a flexible printed circuit board (FPC) 1. An optical member (i.e., the optical lens 6) and an optical filter 7 are held by respectively the fixing pedestal 4 and the fixing cap 5) on the front side of the FPC board 1. (See, para. [0036] and Figs. 3 and 4 of Shinomiya.)

With respect to the first argument, the Office Action acknowledges that Shinomiya lacks a lens portion to form an image of an object onto the optical pickup element, a leg portion to support the lens portion, and a contact portion. The Office Action nevertheless cites Ikeda’s lens fitting member 5 to remedy such deficiencies of Shinomiya (see, pages 4 and 5 of the Office Action). Applicants submit that Ikeda does not cure Shinomiya’s deficiencies because there is no teaching as to how Ikeda’s lens fitting member 5 can be incorporated in Shinomiya as an optical member engaging with an inner surface of Shinomiya’s frame 13.

Ikeda teaches a lens fitting member 5 having fitting legs 6 and a lens 7. The lens fitting member 5 is supported on the printed circuit board 1. In one embodiment, the lower ends of the

legs 6 have stepped parts 11, which are brought into contact with the surface of the image sensing element 3. In Ikeda, the image sensing element 3 is mounted on the printed circuit board 1.

There is no teaching as to how Ikeda's lens fitting member 5 can be incorporated in Shinomiya as an optical member while engaging with an inner surface of Shinomiya's frame 13 (interpreted by the Office Action as the claimed outer frame). In the cited portions of Ikeda, the lens fitting member 5 is brought in contact with the image sensing element 3 and supported on the printed circuit board 1 through adhesive 4. No frame is present in the cited portions of Ikeda, much less one engaging the lens fitting member 5, as does the outer frame recited in independent claim 1.

On the other hand, the frame 13 in Shinomiya is provided to support and move the lens 6 to adjust focus. Accordingly, one skilled in the art will not be motivated to employ Shinomiya's frame 13 to support Ikeda's lens fitting member 5 to arrive at the claimed invention. Consequently, the lens fitting member 5 in the combined art does not meet the claim features of "an inner surface of the outer frame being engaged with the optical member" recited in independent claim 1. Therefore, independent claim 1 is not obvious over the cited art for at least the above reasons.

With respect to the second argument, applicants submit that Ikeda's lens fitting member 5 cannot be readily incorporated in Shinomiya's solid state imaging apparatus and brought in contact with its imaging element 9 because the legs 6 of Ikeda's lens fitting member 5 will interfere with Shinomiya's optical filter 7.

Shinomiya teaches that its optical filter 7 is supported by the fixing pedestal 4. As Fig. 3 of Shinomiya shows, the optical filter 7 is positioned above the opening portion 14 and extends laterally beyond the opening portion 14 and in contact with the fixing pedestal 4.

The Office Action merely asserts that Shinomiya can be modified to incorporate Ikeda's lens fitting member 5. However, the Office Action does not show how the legs 6 of Ikeda's lens fitting member 5 can be arranged to bypass Shinomiya's optical filter 7 and reach the imaging

element 9 on the opposite side of the FPC board 1. In fact, as one skilled in the art will appreciate, if Shinomiya is to be modified to incorporate Ikeda's lens fitting member 5 in order to arrive at the claimed invention, the legs 6 of Ikeda's lens fitting member 5 will interfere with Shinomiya's optical filter 7. Consequently, the combination of Shinomiya and Ikeda as proposed in the Office Action will render Shinomiya inoperable. See, MPEP § 2143.01V. Therefore, independent claim 1 is not obvious over the cited art for the above additional reasons.

In view of the above, Shinomiya and Ikeda, taken either individually or in combination, do not teach the above features recited in the amended independent claim 1. Independent claim 1 thus patentably distinguishes over the cited art. Withdrawal of the 35 U.S.C. § 103(a) rejection of independent claim 1 is hereby respectfully requested.

New Independent Claim 47

Similar to independent claim 1, new independent claim 47 recites "an optical member including a lens portion to form an image of an object onto the optical pickup element, a leg portion to support the lens portion, and a contact portion to be brought in contact with the image pickup element." Therefore, independent claim 47 is allowable for at least the reasons in the second argument presented above in connection with independent claim 1.

Dependent Claims 2-7 and 45-46, and 48-49

Claims 2-7, 45-46, and 48-49 depend, either directly or indirectly, from independent claim 1 or 47 and therefore are allowable therewith. In addition, these dependent claims include features which serve to still further distinguish the claimed invention over the prior art of record.

Dependent Claims 9-15 and 25-29

Claims 9-15 and 25-29 each depend from independent claim 1, but were inadvertently withdrawn from consideration. Applicants request these claims be reinstated and considered prior to the issuance of the next Office Action.

Claims 8, 16, 30, and 37-40

Claims 8, 16, 30, and 37-40 as amended are linked by at least one of independent claims 1 and 47. Accordingly, upon allowance of independent claim 1 or 47, dependent claims 8, 16, 30, and 37-40 should be rejoined.

Conclusion

Based on all of the above, applicants submit that the present application is now in full and proper condition for allowance. Prompt and favorable action to this effect, and early passage of the application to issue, are once more solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,
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